Fee Only JFW

PTO/SB/21 (05-03)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/034,826
Filing Date	December 28, 2001
First Named Inventor	Garrett Holmes, et al.
Art Unit	2832
Examiner Name	Lincoln Donovan
Total Number of Pages in This Submission: 30	Attorney Docket Number: DKT 00054A (BWI-00055)

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☑ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please identify below): Return Receipt Postcard

Remarks

Applicant believes no fee to be due for the attached filing, however, should additional fees be due in order to prevent the abandonment of this application, please consider this as authorization to charge Deposit Account No. 501612 (Warn, Hoffmann, Miller & LaLone, P.C.) for any such fees due. A duplicate copy of this document is enclosed for this purpose.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Warn, Hoffmann, Miller & LaLone, P.C. Philip R. Warn - Reg No. 32775
Signature	
Date	June 28, 2004

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Philip R. Warn - Reg. No. 32775		
Signature		Date	June 28, 2004

Adjustment date: 11/02/2004 SDIRETA1
07/13/2004 PYARBORO 00000002 023182 10034826
01 FC:1251 110.00 CR

004 PYARBORO 00000002 023182 10034826
251 110.00 BA

LAW OFFICES

WARN, HOFFMANN, [illegible] & LALONE, P.C.

Intellectual Property Matters
PATENTS, TRADEMARKS AND COPYRIGHTS

Richard W. Hoffmann
Douglas P. LaLone
John K. McCulloch
John A. Miller
Gregory L. Ozga
Preston H. Smirman
Philip R. Warn

691 North Squirrel Road – Suite 140
Auburn Hills, Michigan 48326

www.warnhoffmann.com

Telephone: (248) 364-4300
Facsimile: (248) 364-4285

Saginaw Office
5291 Colony Drive North
Saginaw, Michigan 48603
Telephone: (989) 792-2500
Facsimile: (989) 792-2535

September 22, 2004

By: Facsimile Only

U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Attention: Refunds Branch

Re: **Request for Refund**
on Monthly Statement of Deposit Account No. 023182
for Borg-Warner Automotive Inc.
Statement Dated 7-30-04

and Charge on Statement for U.S. Patent Application
Serial No. 10/034,828 - Filed: December 28, 2001
Attorney Docket No. DKT 00084A (BWI-00056)

Dear Sirs:

To follow is a copy of the July, 2004 Monthly Statement of Deposit Account No. 023182 for Borg-Warner Automotive Inc. This is a Request to Refund the amount of $110.00 charged on July 13, 2004 for a One Month Extension of Time for the above patent application, since no Extension of Time was requested or necessary.

Enclosed are copies of the Office Action dated March 26, 2004, and our Amendment and Response to Office Action dated June 28, 2004. Because June 26, 2004 was a Saturday, the 3 month deadline for filing a Response was the following Monday, June 28, 2004. Therefore, our Response was timely filed, and our client (Borg-Warner Automotive Inc.) should not have been charged for an Extension of Time.

Thank you very much for your attention to this matter. If you have any questions, please contact me at (248) 364-4300.

Very truly yours,

Philip R. Warn
Reg. No. 32775

PRW:jmz
Enclosures

DA -9-04

UNITED STATES PATENT AND TRADEMARK OFFICE

MONTHLY STATEMENT OF DEPOSIT ACCOUNT

To replenish your deposit account, detach and return top portion with your check. Make check payable to Director of Patents & Trademarks.

Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office
Washington, DC 20231
www.uspto.gov

BORG-WARNER AUTOMOTIVE INC
ATTN: DEBBIE KOCHAN
3800 AUTOMATION AVENUE, STE. 100

AUBURN HILLS, MI 48326

FINA

Account No.	023182
Date	7-30-04
Page	1

PLEASE SEND REMITTANCES TO:
U. S. Patent and Trademark Office
P.O. Box 70841
Chicago, IL 60673

DATE POSTED MO.	DAY	YR.	CONTROL NO.	DESCRIPTION (Serial, Patent, TM, Order)	DOCKET NO.	FEE CODE	CHARGES/ CREDITS	BALANCE
7	1	04	248	10459666	BW-DKT03011	1501	1330.00	9916.75
7	1	04	249	10459666	BW-DKT03011	1504	300.00	9616.75
7	8	04	213	10464190	BW-DKT03020	1501	1330.00	8286.75
7	8	04	214	10464190	BW-DKT03020	1504	300.00	7986.75
7	13	04	2	10034826	000344 DM1-0	1251	110.00	7876.75
7	14	04	2	10461539	BW-DKT02042A	1501	1330.00	6546.75
7	14	04	3	10461539	BW-DKT02042A	1504	300.00	6246.75
7	30	04	3	10147710	BW-DKT01080	1501	1330.00	4916.75
7	30	04	4	10147710	BW-DKT01080	1504	300.00	4616.75

AN AMOUNT SUFFICIENT TO COVER ALL SERVICES REQUESTED MUST ALWAYS BE ON DEPOSIT	OPENING BALANCE	TOTAL CHARGES	TOTAL CREDITS	CLOSING BALANCE
	11246.75	5630.00	0.00	4616.75

MS020A (2/2003)

NOTE: DD INDICATES OVERDRAWN

BWI-00065 Smith Office Action Ex: Habtemariam

Office Action Summary

10/034,[illegible]		HOLMES ET AL.
Examiner		Art Unit
Dawit [illegible]		1653

-- The MAILING DATE of this communication [illegible] for all correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 02 June 2004.

2a)☐ This action is FINAL. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) 9-22 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) 1-8 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)	4)☐ Interview Summary (PTO-413) Paper No(s). _____.
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.	6)☐ Other:

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,826	12/28/2001	Garrett Holmes	[illegible]	1484

7590 03/26/2004

Patent Docket Administrator
BorgWarner Inc.
3001 West Big Beaver Rd. - Suite 200
P.O. Box 5060
Troy, MI 48007-5060

EXAMINER	
DONOVAN, LINCOLN D	
ART UNIT	PAPER NUMBER
2832	

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of group I, claims 1-6 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the multiple areas of search for all of the claimed inventions would have been necessitated by the claimed subject matter. This is not found persuasive because each claimed invention is directed towards structure and circuitry requiring differing considerations and search areas.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perach [US 4,536,645] in view of Hamilton et al. [US 5,707,039].

Regarding claim 1, Perach discloses a control valve assembly comprising:

- a housing [40] defining an internal chamber therein;
- an electromagnetic coil [22] wound on a bobbin [38] coaxially mounted within the housing;
- an axially movable armature [72], having first and second ends, mounted in the internal chamber;
- an actuation member [74] extending from the armature;

- a pole piece [46] operably associated with the armature;
- a valve manifold [12] including control passages [18, 19];
- first and second valve seats [figure 3];
- a valve [66] positioned for selectively sealing on the first or second valve seats;
- a spring [76] for biasing the armature, and
- control means [column 5, line 57-column 6, line 14].

Perach discloses the instant claimed invention except for a flux tube partially surrounding the armature.

Hamilton et al. disclose a hydraulic solenoid having an armature [41] interacting with a flux tube [33].

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use the flux tube design with the pole piece of Perach, as suggested by Hamilton et al., for the purpose of increasing activation force.

Regarding claims 2-3 and 6-7, The specific control functions, bias states and valve positioning would have been an obvious design consideration dependent upon the specific application of the hydraulic valve.

Claims 4-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perach, as modified, as applied to claim 1 above, and further in view of Berkhimer et al. [US 5,752,689].

Perach, as modified, discloses the instant claimed invention except for the valve being a ball valve.

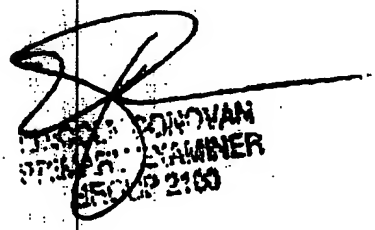
Barkhimer et al. disclose a solenoid valve assembly having a ball type valve.

It would have been obvious to a person having ordinary skill in the art at the time invention was made to use a ball type valve design of Barkhimer et al. for the valve of Perach, as modified, for the purpose of maintaining a superior seal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donovan Lincoln whose telephone number is 703 308-3111. The examiner can normally be reached on M-F 8:30-5:00.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1920.

ldd
March 19, 2004



Notice of References Cited	Application/Control No. [illegible]	Applicant(s)/Patent Under Reexamination HOLMES ET AL.	
	Examiner Donovan Lincoln	Art Unit 2832	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,752,899	05-1998	Stahlherm et al.	251/129.15
	B	US-5,707,039	01-1998	Hamilton et al.	251/129.17
	C	US-4,538,645	09-1985	Perach, Asi	137/625.65
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

FORM HDP-1449 (Based on Form PTO-1449)

PATENT AND TRADEMARK OFFICE
INFORMATION DISCLOSURE CITATION
(Use several sheets if necessary)

Sheet 2 of 3

Attorney Docket No.	Serial No.
DKT 03044A (P01-0035)	10/034,828
Applicant	
Garrett Holmes, et al.	
Filing Date	Group
December 28, 2001	2836

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Technology Center 2800

U.S. PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	Filing Date (If appropriate)
22.	LP	4,564,046	1/1986	Lungu		
23.		4,532,951	8/1985	Formanick		
24.		4,494,727	1/1985	Eggleston, et al.		
25.		4,483,484	11/1984	Hafner, et al.		
26.		4,411,289	10/1983	Wallace		
27.		4,226,142	10/1980	Reinhold, et al.		
28.		3,989,063	11/1976	Bonnelycke, et al.		
29.		3,970,111	7/1976	Bolduc, et al.		
30.		3,964,518	6/1976	Hanson, et al.		
31.		2,090,569	10/1936	Hinge		

FOREIGN PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Country	Class/ Subclass	Translation Yes	No
1.	LP	DE 19,744,696	4/1999	Germany			
2.		WO 9,848,332	10/1998				
3.		DE 19,622,101	12/1997	Germany			
4.		DE 4,431,459	9/1994	Germany			
5.		DE 4,131,033	3/1993	Germany			
6.		2,041,593	8/1991	Canada			
7.		DE 3,907,883	9/1989	Germany			

Examiner: DONOVAN Date Considered: 08-06-04

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM HDP-1449 (Based on Form PTO-1449)

PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Sheet 3 of 3

Atty. Docket No.		Appln. No.
[illegible]	[illegible]-00055)	10/034,826
Applicant		
[illegible]		Group
Filing Date		
December 28, 2001		2838

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FOREIGN PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Country	Class/ Subclass	Translation Yes	Translation No
8.	VD	DE 3,618,830 A1	12/1987	Germany	—		

Examiner:	DONOVAN	Date Considered:	08-16-05

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

PATENT AND TRADEMARK OFFICE

INFORMATION DISCLOSURE CITATION

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	Filing Date (if appropriate)
1.	LP	6,161,813	12/2000	[redacted], et al.		
2.		6,116,870	9/2000	Kramer		
3.		6,069,784	[redacted]/2000	De[redacted]		
4.		5,915,799	6/1999	Bo[redacted] et al.		
5.		5,810,328	9/1998	Boerhard		
6.		5,769,121	6/1998	Werner		
7.		5,730,509	3/1998	Eith, et al.		
8.		5,707,039	1/1998	Hamilton, et al.		
9.		5,645,097	7/1997	Zechlstein, et al.		
10.		5,636,828	6/1997	Brehm, et al.		
11.		5,617,890	4/1997	Brey, et al.		
12.		5,307,774	5/1994	Hammer		
13.		5,301,921	4/1994	Kumer		
14.		5,289,841	3/1994	Mo[redacted]eno		
15.		5,218,998	6/1993	Tenhicke		
16.		5,127,624	7/1992	D[redacted]		
17.		5,109,885	5/1992	Tessicher		
18.		5,069,420	12/1991	Stobbe, et al.		
19.		5,051,631	9/1991	Anderson		
20.		4,907,684	3/1990	Breach		
21.		4,662,605	5/1987	Gertie		

Examiner: DONIVAN Date Considered: 05-01-03

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

TO PHILIP WARN

SN: 10/034,826

DKT# DKT 00054A (BWI-00055)

FAX # 248-364-4285

PTO/SB/21 (05-03)

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/054,[illegible]
Filing Date	December [illegible], 2001
First Named Inventor	Garrett Holmes, et al.
Art Unit	2832
Examiner Name	Lincoln Donovan
Attorney Docket Number	DKT 00[illegible]A (BWI-00055)

Total Number of Pages in This Submission: 30

ENCLOSURES (Check all that apply)

- [ ] Fee Transmittal Form
- [ ] Fee Attached
- [x] Amendment/Reply
- [ ] After Final
- [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
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- [ ] Drawing(s)
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- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
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- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) (please identify below): Return Receipt Postcard

Remarks

Applicant believes no fees to be due for the attached filing, however, should additional fees be due in order to prevent the abandonment of this application, please consider this as authorization to charge Deposit Account No. 501612 (Warn, Hoffmann, Miller & LaLone, P.C.) for any such fees due. A duplicate copy of this document is enclosed for this purpose.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Warn, Hoffmann, Miller & LaLone, P.C. Philip R. Warn - Reg No. 32775
Signature	
Date	June 28, 2004

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Philip R. Warn - Reg. No. 32775		
Signature		Date	June 28, 2004

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/034,828

Filing Date: December 28, 2001

Applicant: Garrett Holmes, et al.

Group Art Unit: 2832

Examiner: Lincoln Donovan

Title: VARIABLE BLEED SOLENOID

Attorney Docket: DKT 00054A (BWI-00055)

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service, as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 28, 2004. By: [signature]

AMENDMENT AND RESPONSE TO OFFICE ACTION

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is in response to the Examiner's Office Action mailed March 26, 2004. The Applicant respectfully requests reconsideration of the Examiner's rejections and/or

objections in view of the remarks set forth below. Please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on Page 3 of this paper.

Remarks begin on Page 9 of this paper.

LISTING OF THE CLAIMS

The listing of claims will replace all prior versions and listing of claims in the application.

1. (currently amended): A [illegible] bleed solenoid which has low leak properties comprising:

a housing defining an internal chamber therein;

an electromagnetic coil wound on a bobbin wherein said bobbin is coaxially mounted within the housing;

an axially movable armature mounted in the internal chamber, said armature having a first end and a second end;

an actuation member extending from an end of said armature;

a pole piece and flux tube operably associated with said armature for moving said armature in a first direction upon energizing said coil;

a valve manifold including a passage for a hydraulic supply pressure and a chamber leading to a hydraulic control side pressure and for directing said control side to an exhaust;

a first valve seat and a second valve seat;

a valve positioned for selectively sealing on said first valve seat or said second valve seat, wherein said actuation member is operable to selectively contact said valve;

a spring for biasing said armature; and

a control circuit for supplying power to said armature for allowing control of said supply pressure in a supply side for sealing the valve in a low leak position;

wherein said manifold further comprises a supply side seat and an exhaust side seat with said valve moving between said supply side seat and said exhaust side seat for selectively and variably positioning therebetween;

wherein the valve is a ball positioned between said exhaust side seat and said supply side seat.

2. (original): The solenoid of claim 1 wherein:

said spring biases said valve in a first direction and overcomes supply pressure acting on the valve, said armature upon being energized overcoming said spring and selectively opening said valve for allowing supply side pressure to bleed to the control side pressure port.

3. (canceled)

4. (canceled)

5. (currently amended): The solenoid of claim 4 1 wherein the valve seats are axially aligned with said actuation member.

6. (original): The solenoid of claim 1 wherein the armature acts to close the valve upon actuation thereof, said valve being normally open to supply side pressure.

7. (original): The solenoid valve of claim 6 wherein said spring is weaker than said supply side pressure acting on said valve.

8. (canceled)

9. (withdrawn): A variable bleed solenoid which has low leak properties comprising:

a housing defining an internal chamber therein;

an electromagnetic coil wound on a bobbin, wherein said bobbin is coaxially mounted within the housing;

an axially movable armature mounted in the internal chamber, said armature having a first end and a second end;

an actuation member extending from an end of said armature;

a pole piece and flux tube operably associated with said armature for moving said armature in a first direction upon energizing said coil;

a valve manifold including an aperture for a hydraulic supply pressure and a chamber leading to a hydraulic control side pressure port;

a first valve seat and a second valve seat;

a valve positioned for selectively sealing off said passages; and

a spring for biasing said armature toward closure of said valve to said supply side pressure, said spring being strong enough to overcome the supply pressure acting against it and said armature overcoming said spring biasing when said coil is energized.

10. (withdrawn): The solenoid of claim 9 wherein the manifold further comprises a supply side seat and an exhaust side seat with said valve moving between said supply side seat and said exhaust side seat and to variable positions therebetween.

11. (withdrawn): The solenoid of claim 10 wherein the valve is a ball positioned between said supply side seat and said exhaust side seat.

12. (withdrawn): The solenoid of claim 9 wherein the armature is axially aligned with said actuation member.

13. (withdrawn): A variable bleed solenoid which has low leak properties comprising:

a housing defining an internal chamber therein;

an electromagnetic coil wound on a bobbin wherein said bobbin is coaxially mounted within the housing;

an axially movable armature mounted in the internal chamber, said armature having a first end and a second end;

an actuation member extending from an end of said armature;

a pole piece and flux tube operably associated with said armature for moving said armature in a first direction upon energizing said coil;

a valve manifold including an a passage for a hydraulic supply pressure and a chamber leading to a hydraulic control side pressure and for directing said control side to an exhaust;

a first valve seat and a second valve seat;

a valve positioned for selectively sealing on said first valve seat or said second valve seat;

a spring for biasing said armature; and

a control circuit for supplying power to said armature for allowing control of said supply pressure in a supply side for sealing the valve in a low leak position;

wherein said solenoid may be configured into either a first proportional or inversely proportional configuration by inverting of the pole piece and flux tube in the housing and replacement of said spring.

14. (withdrawn): The solenoid of claim 13 wherein in the proportional configuration the spring biases the valve in a first direction for overcoming supply pressure acting on the valve and said armature upon being energized overcomes the spring and opens the valve for allowing supply side pressure to bleed to the control side pressure port.

15. (withdrawn): The solenoid of claim 13 wherein in the inversely proportional configuration said supply side pressure is normally open to control side pressure and said armature closing said valve upon energizing of said coil.

16. (withdrawn): The solenoid of claim 15 wherein a spring is utilized that is weaker than the force of said supply side pressure acting on the valve for allowing the normally open condition.

17. (withdrawn): The solenoid of claim 15 wherein a spring is configured for moving the armature toward opening of the valve to control side pressure.

18. (withdrawn): The solenoid of claim 13 wherein said valve is a ball valve.

19. (withdrawn): The solenoid of claim 14 wherein said valve is a ball valve.

20. (withdrawn): The solenoid of claim 15 wherein said valve is a ball valve.

21. (withdrawn): The solenoid of claim 16 wherein said valve is a ball valve.

22. (withdrawn): The solenoid of claim 17 wherein said valve is a ball valve.

Claims 1-22 are pending in the application.

Claims 1-8 are rejected.

Claims 9-22 have been withdrawn from consideration.

Claims 3, 4 and 8 have been cancelled, without prejudice.

Claims 1 and 5 have been amended. Support for these amendments can be found throughout the specification, claims and drawings as originally filed.

35 USC §103(a) REJECTION

Claims 1-3, 6 and 7 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 4,538,645 to Perach in view of U.S. Patent No. 5,707,039 to Hamilton et al.

The Applicants respectfully traverse the 35 USC §103(a) rejection of claims 1-3, 6 and 7. Claim 3 has been canceled, without prejudice, and substantially incorporated into claim 1.

The standard for obviousness is that there must be some suggestion, either in the reference or in the relevant art, of how to modify what is disclosed to arrive at the claimed invention. In addition, "[s]omething in the prior art as a whole must suggest the desirability and, thus, the obviousness, of making" the modification to the art suggested by the Examiner. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051, 5 U.S.P.Q.2d (BNA) 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988). Although the Examiner may suggest the teachings of a primary reference could be modified to arrive at the claimed subject matter, the modification is not obvious unless the prior art

also suggests the desirability of such modification. *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d (BNA) 1397, 1398 (Fed. Cir.1989). There must be a teaching in the prior art for the proposed combination or modification to be proper. *In re Newell*, 891 F.2d 899, 13 U.S.P.Q.2d (BNA) 1248 (Fed. Cir. 1989). If the prior art fails to provide this necessary teaching, suggestion, or incentive supporting the Examiner's suggested modification, the rejection based upon this suggested modification is error and must be reversed. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d (BNA) 1566 (Fed. Cir. 1990).

The law is also clear that a claim in dependent form shall be construed to incorporate all the limitations of the claim to which it refers. 35 USC §112 ¶ 4.

In the interests of expediting prosecution of the instant application, and without any admission that an amendment is necessary, the Applicant have amended claim 1 to recite, among other things, a variable bleed solenoid which has low leak properties comprising: (1) a housing defining an internal chamber therein; (2) an electromagnetic coil wound on a bobbin wherein said bobbin is coaxially mounted within the housing; (3) an axially movable armature mounted in the internal chamber, said armature having a first end and a second end; (4) an actuation member extending from an end of said armature; (5) a pole piece and flux tube operably associated with said armature for moving said armature in a first direction upon energizing said coil; (6) a valve manifold including a passage for a hydraulic supply pressure and a chamber leading to a hydraulic control side pressure and for directing said control side to an exhaust; (7) a first valve seat and a second valve seat; (8) a valve positioned for selectively sealing on said first valve seat or said second valve seat, wherein said actuation member is operable to selectively contact said valve; (9) a spring for biasing said armature; and

(10) a control circuit for supplying power to said armature for allowing control of said supply pressure in a supply side for sealing the valve in a low leak position; wherein said manifold further comprises a supply side seat and an exhaust side seat with said valve moving between said supply side seat and said exhaust side seat for selectively and variably positioning therebetween; wherein the valve is a ball positioned between said exhaust side seat and said supply side seat.

Neither Perach nor Hamilton et al., either alone or in combination therewith, discloses such a structure. Specifically, neither reference discloses a ball valve generally, and more specifically, neither reference discloses an actuation member extending form the armature that is operable to selectively contact the ball valve. Both of these references merely disclose poppet types valves that are fastened to, or otherwise connected to, the armature. In contradistinction, the instant invention claims a system wherein a portion of the armature, i.e., the actuation member, can selectively contact the valve. Thus, one of ordinary skill in the art would not look to either of Perach and/or Hamilton et al., either alone or in combination therewith, to construct a variable bleed solenoid, as presently claimed.

Therefore, the Applicants submit that neither Perach nor Hamilton et al., either alone or in combination therewith, render claim 1 obvious. Furthermore, claims 2, 6 and 7, which depend from and further define claim 1, are likewise not render obvious by Perach nor Hamilton et al., either alone or in combination therewith.

Accordingly, the Applicant submits that the 35 USC §103(a) rejection of claims 1-2, 6 and 7has been overcome.

35 USC §103(a) REJECTION

Claims 4, 5 and 8 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 4,538,645 to Perach, as modified, as applied to claim 1 above, and further in view of U.S. Patent No. 5,752,689 to Barkhimer et al.

The Applicants respectfully traverse the 35 USC §103(a) rejection of claims 4, 5 and 8. Claim 4 has been canceled, without prejudice, and substantially incorporated into claim 1. Claim 8 has also been canceled, without prejudice.

As previously noted Perach does not disclose such a structure as recited in claim 1. Specifically, it does not disclose a ball valve generally, and more specifically, it does not disclose an actuation member extending form the armature that is operable to selectively contact the ball valve. Perach merely discloses a poppet type valve that is fastened to, or otherwise connected to, the armature. In contradistinction, the instant invention claims a system wherein a portion of the armature, i.e., the actuation member, can selectively contact the valve.

While Birkhimer et al. arguably discloses a ball type valve, it does not cure the deficiencies in the teachings of Perach. Most importantly, Birkhimer et al. appears to disclose a system wherein there is only one valve seat 74 adjacent to the ball valve 76, as opposed to two valve seats as currently claimed. Thus, one of ordinary skill in the art would not look to either of Perach and/or Birkhimer et al., either alone or in combination therewith, to construct a variable bleed solenoid, as presently claimed.

Therefore, the Applicants submit that neither Perach nor Birkhimer et al., either alone or in combination therewith, render claim 1 obvious. Furthermore, claim 5, which

depends from and furthers define claim 1, is likewise not rendered obvious by Perach nor Birkhimer et al., either alone or in combination.

Accordingly, the Applicant submits that the 35 USC §103(a) rejection of claim 5 has been overcome.

CONCLUSION

It is respectfully submitted that in view of the above amendments and remarks the claims, as amended, are patentably distinguishable because the cited patents, whether taken alone or in combination, do not teach, suggest or render obvious, the present invention. Therefore, applicant submits that the pending claims are properly allowable, which allowance is respectfully requested.

The Examiner is invited to telephone the applicant's undersigned attorney at (248) 364-4300 if any unresolved matters remain.

Any needed extension of time is hereby requested with the filing of this document.

The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 501612. A duplicate copy of this letter is enclosed herewith for this purpose.

Respectfully submitted,

WARN, HOFFMANN, MILLER & LALONE, P.C.
Attorneys for Applicant(s)

Dated: June 28, 2004

By: _____
Philip R. Warn
Reg. No. 32775
Preston H. Smirman
Reg. No. 35365

P.O. Box 70098
Rochester Hills, MI 48307
(248) 364-4300

PRW:PHS:cah

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WARN, HOFFMANN, MILLER & LALONE, P.C.

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Richard W. Hoffmann
Douglas P. LaLone
John K. McCulloch
John A. Miller
Gregory L. Ozga
Preston H. Smirman
Philip R. Warn

691 North Squirrel Road – Suite 140
Auburn Hills, Michigan 48326

www.warnhoffmann.com

Telephone: (248) 364-4300
Facsimile: (248) 364-4285

Saginaw Office
5291 Colony Drive North
Saginaw, Michigan 48603
Telephone: (989) 792-2500
Facsimile: (989) 792-2535

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